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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/955,409	09/12/2001	Andrew R. Vessey	T081 1010	1057

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EXAMINER

GORDON, BRIAN R.

ART UNIT PAPER NUMBER

1743

DATE MAILED: 06/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/955,409

Applicant(s)

VESSEY ET AL.

Examiner

Brian R. Gordon

Art Unit

1743

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 9-12-01.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) 14-19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 11, 13, 20-26, 30 and 32 is/are rejected.
- 7) ☒ Claim(s) 8-10, 12, 27-29, 31 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 9-12-01 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2-11-02.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group I, claims 1-13 and 20-32, in the Paper filed April 12, 2004 is acknowledged. The traversal is on the ground(s) that claim 14 recites the system includes "a liquid handling parameters optimization processing logic....cooperative with the pipette control processing logic that automatically optimizes liquid handling parameters." The term "liquid class is defined in the application as "parameters for pipetting control software to define pipetting of a specific liquid". Therefore applicant asserts there is a close relationship between the method/program product claims and the system. This is not found persuasive because the term "liquid class" is not found in claim 14, furthermore there is no indication that the processing logic functions to perform the specific steps as recited in claim 1 or that it comprises a program with the specific instructions of the program of claim 20. The processing logic is broadly claimed as optimizing liquid-handling parameters.

The requirement is still deemed proper and is therefore made FINAL.

Information Disclosure Statement

2. The Ormand reference, "Does Your Liquid Handler Pipet Accurately?", submitted by applicant would have been applied to certain claims if the publication date would have been known to pre-date that of the filing of the instant application. However, since the publication date is unknown to the examiner, applicant is hereby required to supply the publication date and explain how the reference came to be possessed by applicant.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 1-3, 7, and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites an automated method that comprises specific steps. It is unclear if the method steps are performed by a fully automated device. Is the "identifying" step performed by a user and the "performing" step performed by an automated device. On page 11, paragraph [0038], it is stated that the precision of pipetting varies greatly depending on a number of factors. Paragraphs that immediately follow this paragraph disclose a method or experiment for to perform the step however the examiner fails to locate (within the specification) if the step of identifying factors is achieved by a user or an automated device.

As to claims 2-3, 7, and 11, which recite further steps, it is unclear where or in what order the steps occur in relevance to the steps recited in the claims that they respectively depend upon.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application

by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

6. Claims 1-7, 11, 13, 20-26, 30, and 32 are rejected under 35 U.S.C. 102(e) as being anticipated by Conley et al. US 5,998,218.

Conley et al. disclose a calibration system for an electronically monitored mechanical pipette. The calibration system is used to calibrate an electronic volume monitoring system which includes a transducer assembly and an electronics assembly which monitors a volume delivery adjustment mechanism of the pipette. The calibration system includes either a calibration mapping technique for determining the proper fluid volume delivery setting, or alternatively, an algorithmic technique (computer program with calibration instructions). The calibration system allows for calibration of the pipette at any desired fluid delivery setting, so that the pipette is calibrated specifically to maximize accuracy at the fluid delivery setting desired.

The volume delivery adjusted mechanism is monitored by an electrical volume monitoring system which preferably includes a transducer assembly having two Hall-effect sensors, and an electronics assembly which includes a microprocessor and a display. During volume delivery adjustment, the sensors send a set of transducer

signals to the electronics assembly, which computes and displays the new fluid volume delivery setting (identification of factors affecting precision).

A microswitch assembly is provided for detecting relative rotational motion between the volume delivery adjustment mechanism and the pipette and to signal the electronics assembly that the fluid volume delivery setting is being changed. Upon receipt of a signal, such as an interrupt signal, from the microswitch, the electronics assembly powers up the transducer assembly which then tracks the motion of the volume delivery adjustment mechanism. The transducer sensor signals are received by the electronics assembly which computes and displays the new fluid volume delivery setting (performing optimization). Once the volume delivery adjustment mechanism is no longer being rotated, the electronics assembly shuts down the power to the transducer assembly to minimize power use of the pipette.

The electronics assembly preferably computes the new fluid volume delivery setting based on comparison of the transducer sensors signals with a calibration map which had been previously generated and loaded into the microprocessor thereof by rotating the volume delivery adjustment mechanism through one full revolution and recording the transducer sensor signals at predetermined rotational intervals. The transducer sensor signals received by the microprocessor thereafter are compared to the calibration map and the predetermined fluid volume delivery setting associated with the transducer signal values on the calibration map is then displayed.

Conley specifically mentions the calibration of the system for dispensing volumes of water.

Allowable Subject Matter

7. Claims 8-10, 12, 27-29, and 31 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record does not teach nor fairly suggest method for optimizing liquid-handling parameters wherein the step of identifying the plurality of factors determining precision includes the steps of: automatically generating a screening experimental design based on user-selected parameters and levels to determine the plurality of factors that can be eliminated from any additional evaluation; creating a set of liquid classes based on the screening experiment design; directing a pipetting control processing logic to execute a plurality of pipetting commands corresponding to the liquid classes; and performing an effects analysis to determine the plurality of factors determining pipetting precision.

The prior art of record does not teach nor fairly suggest method for optimizing liquid-handling parameters wherein the step of optimizing the levels of identified factors determining pipetting precision includes the steps of: automatically generating a response surface experimental design based on the identified factors; creating a set of liquid classes based on the response surface experimental design; directing a pipetting control processing logic to execute a plurality of pipetting commands corresponding to the set of liquid classes; and performing a response surface methodology analysis to determine the optimized level of factors determining precision.

The prior art of record does not teach nor fairly suggest wherein the step of verifying and evaluating the precision and accuracy of the liquid class under test composes the steps of: evaluating all volume ranges specified for a liquid class in a single automated run; generating the set of final liquid class parameters; and tabulating and graphically presenting the precision and accuracy at all measured data points.

The prior art of record does not teach nor fairly suggest a computer program product for optimizing liquid-handling parameters wherein the program instructions that identify the plurality of factors determining precision comprise: program instructions that automatically generate a screening experimental design based on user-selected parameters and levels to determine the plurality of factors that can be eliminated from any additional evaluation; program instructions that create a set of liquid classes based on the screening experiment design; program instructions that direct a pipetting control processing logic to execute a plurality of pipetting commands corresponding to the liquid classes; and program instructions that perform an effects analysis to determine the plurality of factors determining pipetting precision.

The prior art of record does not teach nor fairly suggest a computer program product for optimizing liquid-handling parameters wherein the program instructions that optimize the levels of identified factors determining pipetting precision comprise: program instructions that automatically generate a response surface experimental design based on the identified factors; program instructions that create a set of liquid classes based on the response surface experimental design; program instructions that direct a pipetting control processing logic to execute a plurality of pipetting commands

corresponding to the set of liquid classes; and program instructions that perform a response surface methodology analysis to determine the optimized level of factors determining precision.

The prior art of record does not teach nor fairly suggest computer program product for optimizing liquid-handling parameters wherein the program instructions that verify and evaluate the precision and accuracy of the liquid class under test compose: program instructions that evaluate all volume ranges specified for a liquid class in a single automated run; program instructions that generate the set of final liquid class parameters; and program instructions that tabulate and graphically present the precision and accuracy at all measured data points.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Matsubara, Shigeki et al.; Mimura, Tomonori et al.; Fischer, Timothy J. et al.; Murphy, Jr., Lawrence J.; Endoh, Koichi et al.; Lemmo, Tony et al.; Pelc, Richard E. et al.; Flesher, Robert W.; Meltzer, Walter; Magnussen, Jr., Haakon T. et al.; Kalmakis, George P. et al.; Marteau d'Autry, Eric; Meltzer, Walter; DeVaughn, Donald H.; and Krupka, Udo et al. disclose pipettes and calibration systems.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian R. Gordon whose telephone number is 571-272-1258. The examiner can normally be reached on M-F, with 2nd and 4th F off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

brg


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